Developing a district IT policy

Proposals formulated by members of a workshop held in June 1983 about the development of a district policy for the introduction of information technology with particular emphasis on the implementation of computerised departmental information systems

Published by the King's Fund on behalf of the NHS/DHSS Health Services Information Steering Group

a series of occasional papers produced by the NHS/DHSS Health Services Information Steering Group and published on its behalf by the King's Fund. The other titles in this series are

Converting data into information: proposals formulated by members of two workshops held in March 1982 about the management arrangements required for collecting valid clinical data and providing a district information service

Introducing IT in the district office: proposals arising from a study carried out in Southend Health District by Aslib Research and Consultancy in 1982

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Proposals formulated by members of a workshop held in June 1983 about the development of a district policy for the introduction of information technology with particular emphasis on the implementation of computerised departmental information systems

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Chapter 1 : Introduction

1.1 The NHS in England provides health care for some 46 million people. The effective management and delivery of services requires competent personnel with the right tools to do the job. Over the last ten years management techniques and processes have been developed which assist health authorities and their senior officers in the discharge of their onerous and complex duties. All of them rely on the availability of timely, relevant information.

1.2 Information technology (IT) not only assists the dissemination of the requisite information but is essential for the efficient acquisition, processing, storage and analysis of the basic data from which it is produced. Although there has been a marked improvement in the last two years, the NHS has invested far less in IT than most other private and public organisations.

1.3 Competent managers require information and this should be produced using the appropriate technology. The convergence of several factors now offers a unique opportunity to decisively influence the quality of NHS management. They include:

a. the awareness of NHS managers of the need for information,
b. the changes in information technology, and
c. the range of IT applications now available.

Need for information

1.4 Following the 1974 reorganisation, the DHSS introduced two national management processes, both of which involve the extensive use of statistical data: the NHS Planning System and the

RAWP formula for resource allocation. Difficulties in using data for these purposes was a major factor in the establishment of the NHS/DHSS Health Services Information Steering Group. The move towards statistically based systems received fresh impetus after the 1982 restructuring with the work on performance indicators and the institution of regional and district reviews.

1.5 The need for health authorities to be informed about resource use has been heightened by the cash limiting of financial allocations, manpower targets and low rates of growth. The allocation of resources at district is no longer a matter of choosing from among a range of potential new developments but entails a comprehensive review of the totality of an authority's activity and the redistribution of resources both between and within services.

1.6 Resource constraints have highlighted the crucial role that information may play in efficient operational management. Well planned scheduling can lead to the more intensive use of expensive facilities such as wards and operating theatres. Unit and departmental managers with access to up-to-date operational information can quickly identify poor performance and bottlenecks, and initiate corrective action.

Information technology

1.7 The changes in the capability of IT have been rapid and profound. The hardware is becoming progressively smaller, cheaper and more powerful. The computing power which ten years ago required major investment and was housed in an air-conditioned purpose-built room can now be bought for a few thousand pounds and put on the top of a desk.

1.8 Software no longer has to be written specially for each new application in a district. There is an increasing range of NHS and

commercially produced software packages to meet common needs as well as the development of software aids allowing the non-specialist user to carry out his own programming.

1.9 The ability of the computer to process and store large volumes of statistical data is well established but in recent years other IT capabilities have been developed. Many routine clerical and administrative tasks can now be done by machines relieving staff from carrying out repetitive tasks and freeing them for more productive work. The ability to transmit electronically text, pictures and numbers can greatly improve communications between health professionals thus allowing them more time to care for patients.

IT applications

1.10 The major applications of interest to a health district are:

a. systems concerned with quantitative data,
b. planning systems involving text, numbers and graphics,
c. text management systems for handling internal information,
d. communications within the district, and
e. communication with external information systems.

1.11 Quantitative data systems are discussed in Chapter 3. Planning and text management systems have been reviewed in an earlier publication in this series, *Introducing IT in the district office*. Intra-district communications and the interaction with external information systems will be the subject of a future publication.

Consequences for the NHS

1.12 All the changes outlined demonstrate the need to concentrate the focus of IT development in the NHS on the requirements of staff in the district. It is within districts that care is delivered, and it is here that the wide range of IT applications can be most

beneficial to operational management and provide the management information required by those primarily responsible for allocating and reviewing the use of resources. The changes in technology make it possible to implement local systems which will meet the expectations of the potential users.

1.13 To exploit the capabilities of the technology available, each district should now formulate a coherent and comprehensive policy for the implementation of IT. Factors which should be included in such a policy are described in Chapter 2.

1.14 The emphasis on district IT requirements has major consequences for regional health authorities and the national bodies responsible for policy. Information transmitted to higher management levels will be produced automatically as a by-product of that required at district level. Regional and national IT policies must be firmly based on district requirements and the regional role will increasingly become one of advice and support to the district users. The implications for higher management tiers are considered in Chapter 4.

Chapter 2 : A district IT policy

2.1 It is *proposed* that each district health authority develop a policy for the comprehensive implementation of information technology. Such a policy should be considered an integral part of the district strategic plan, have regard to regional and national guidelines and should cover:

a. the strategy for the implementation of IT in support of health service development,
b. management arrangements including investment priorities for achieving this strategy,
c. skills required,
d. arrangements for training and education, and
e. technical guidance to promote cost-effectiveness and effective implementation.

IT strategy

2.2 Information needs and technology are changing rapidly and there is no short-term prospect of a steady state being achieved. Although it is possible to specify broad objectives for an IT strategy in terms of the management requirements, the technology to be used cannot be fully specified for the long term. The traditional management technique of setting specific goals and then working out ways to achieve them therefore presents difficulties. A more fruitful approach is to review the needs and capabilities of a district and, in the light of these, plan a way forward with a broad underlying view of the direction to be taken. A district IT policy should act as a compass rather than an ordnance survey map; although the general location of the destination is known, the best roads to travel are not.

2.3 The uncertainty about the precise nature of future developments should not deter districts from making a start in implementing IT now. User-led initiatives will afford the organisation invaluable experience of the new technology and will give senior managers the confidence to seek out and exploit technological innovations.

2.4 It is *proposed* that a district approach to IT implementation should be incremental and progress should be made by controlled evolution. Unlike major organisational change which demands great expertise from senior officers at the highest management tiers, the incremental approach is dependent on projects and ideas coming from the operational level. Although investment and implementation staff are required, the key ingredients for success are the commitment and expertise of operational managers.

Management arrangements

2.5 Effective organisational arrangements are required for two management tasks:

a. The formulation of an IT policy (these are discussed in paragraphs 2.6 to 2.15).

b. The implementation of IT applications (these are discussed in paragraphs 2.16 to 2.18).

2.6 In the first publication in this series, *Converting data into information*, proposals are made about the management arrangements for providing a district information service. A key recommendation in the document is that the development of a district computing capability should be within the context of a strategy for developing a district information service. Proposals are also made about the management arrangements required to ensure:

a. the equitable determination of priorities and procedures,

b. the ease of access to information or data processing facilities, and
c. the effective operational management of the district information service.

2.7 A district management team should be responsible for determining the priorities of the service and for decisions concerning access to information or data processing facilities. To assist the DMT in discharging this responsibility, an information users' group should be set up which can ensure that the major information users and potential users in the district have an equitable share of the information service's help and assistance and of IT applications.

2.8 A major function of the information users' group should be the development of the district's IT capability. Thus it will advise the DMT on:

a. the formulation of the district IT policy including the establishment of priorities,
b. requests for funding IT applications, and
c. the promotion of training and IT awareness.

2.9 It is *proposed* that the users' group include all the major disciplines in the district as well as staff with a particular IT expertise or interest. The aim should be to obtain a group representing the major information users in the district (see the list of possible applications in paragraphs 3.3 and 3.4). It is particularly important to have the active participation of clinicians, and the users' group should include representatives from the medical committee structure. With an increasing interest in developing information flows and IT links between the primary and secondary care sectors, it is fruitful to include representatives from general practice and family practitioner committee administration.

2.10 In large districts, particularly those associated with a university, the establishment of an information users' group may not adequately encompass the many IT interests within the district. There may be multiple sources of funding, a number of different IT providers and many current and potential users. In the Newcastle Health District these difficulties have been resolved by establishing a computing services providers' consortium. All the IT providers are represented, such as the university computing unit and the medical physics department, and a common approach to IT problems is agreed so that consistent advice can be given to users. Individual users then deal with any of the members of the consortium.

2.11 Attempts to rigidly prescribe and directly control the introduction of IT into a district may limit expenditure but will not make a strategy. The allocation of budgets to unit and departmental managers and the availability of alternative sources of funding to clinicians and others leave many opportunities for bypassing prescriptive policies. It is *proposed* that the major objective of the users' group be the harnessing of the enthusiasm of the potential user and the channelling of this into the most productive applications. This can be achieved by educating the user and by providing up-to-date technical advice. A criterion of success should be that no senior manager would consider introducing an IT application without consulting the users' group first, not because it is mandatory but because of its technical competence and knowledge of developments both within and outside the district.

2.12 Each users' group should determine its own list of priorities drawn up in light of the needs and circumstances of the district. Factors which will need to be taken into consideration include:

a. the need for effective service provision, for example, a vaccination and immunisation system,

b. the ability to generate revenue savings, for example, a stock control system for pharmacy,
c. the usefulness of the system to many managers, for example, a financial system producing budgetary information,
d. interest and expertise in a particular unit or department, and
e. the ability to extend the range of management information for strategic and operational planning.

2.13 To enable a rational consideration of requests for funding, it is helpful to have all submissions drafted in a standard format. Details should be available about:

a. objectives of the proposal,
b. options considered including those not involving computerisation,
c. the preferred option:

i reasons for choice,
ii software and hardware requirements,
iii capital and revenue consequences including the cost of installation,
iv arrangements for maintenance and support,
v timetable for implementation, and
vi criteria for evaluating the impact of the implementation of the application.

2.14 Requests for funding will usually fall into three categories, namely proposals:

a. to develop a new computer system,
b. to use existing but relatively untried systems, or
c. to implement one system chosen from several meeting the same need.

Only a minority of districts will have the technical capacity to

develop new systems, although some may wish to buy in such expertise. The implementation of untried systems will inevitably require extra work to sort out unforeseen problems. Most districts will wish to pursue a policy of acquiring systems that are appropriate to user needs and that have a proven record of success. In those cases where there are alternative systems available, the users' group should ensure that the initiator of the request is aware of the alternatives and has evaluated them in deciding on a preferred option.

2.15 A variety of arrangements for funding IT developments is open to districts. A balance must be struck between the wish to develop IT on a district wide basis and thus the setting up of a district IT development budget, and the need to encourage unit and departmental managers to introduce IT in the context of operational management and thus find funds for applications from within unit and departmental budgets. Each district must decide on the arrangements which best suit the local style of management.

2.16 The implementation of an IT application requires a consideration of:

a. the organisational aspects, and
b. industrial relations.

2.17 Great emphasis is often placed on the need for technical guidance in the introduction of IT while all too often organisational aspects are overlooked. Yet, as the technical problems become progressively easier, the greatest barrier to successful IT implementation becomes establishing appropriate relationships between different parts of the organisation. Two key questions need to be resolved for any IT application, namely:

a. Who is to have access to which data and on what basis?

b. Who is to be responsible for ensuring data quality and how is it to be achieved?

2.18 The introduction of new technology will involve consultation with all grades of staff who may be affected. Some districts have found it useful to negotiate a new technology agreement including health and safety aspects, others have not formalised an arrangement. Industrial relations must be considered in the formulation of a district IT policy and the approach taken will depend on the management culture of the individual district.

Skills required

2.19 In *Converting data into information* it is recognised that, in developing an information service, a district will need access to a wide range of skills including computer systems design and programming. Whether the latter skills should be available within the district will depend on the IT application being developed and on economic considerations.

2.20 Many NHS staff not only have an appreciation of the potential of IT but also considerable technical skills. Where such skills exist they are worth harnessing, and formal or informal management arrangements should be made to associate personnel with the requisite skills with the work of the district information service. However, it may be uneconomic to use highly qualified health professionals to carry out simple programming and other tasks.

2.21 Historically the source of most NHS information technology expertise has been in regional management services divisions and computer centres. A variety of arrangements are in operation to permit districts to use these services. The implications for regional services of the current emphasis on district IT applications are discussed in Chapter 4.

2.22 A number of districts have collaborated with commercial organisations, either directly or through arrangements made by the region. These initiatives range from major projects such as the installation of an electronic office in Brighton Health District to a small investment in the programming skills of a local software company. Health services are seen as a large potential market for IT and an increasing number of companies will be offering expert advice and support or off-the-shelf IT applications for the district user.

2.23 Given the wide range of expertise which may be available, it is *proposed* that each district should have a member of the district information service who can offer the DMT and the information users' group 'general practitioner' IT advice and support. Such work requires:

a. the ability to prepare an operational requirement and system specification,
b. knowledge of the capabilities of IT and the sources of specialist advice and assistance,
c. personal and organisational skills to collaborate with users in introducing IT applications, and
d. the ability to undertake a limited amount of programming.

2.24 The functions identified in the preceding paragraph may or may not require a full-time officer depending on the volume and complexity of the IT the district intends to introduce. It may be convenient for two or more districts to share a post. There is merit in appointing such an officer jointly with the region. In this case, although both region and district may be involved in the appointment and the post holder will have a professional base at region, the district (or districts) should finance the post, and the incumbent should work within district policies and be responsible to a senior district officer as occurs in the North East Essex Health District.

Education and training

2.25 Arrangements for education and training should form an integral part of a district IT strategy. Consideration should be given to:

a. raising awareness of the potential of IT, and
b. the technical training of IT operators.

2.26 An important function of the users' group is the stimulation of awareness in the district of the capabilities of information technology. Senior managers and health authority members will be loath to authorise the necessary expenditure unless they are aware of the technical possibilities, and the applications which can improve the efficiency and effectiveness of patient care and the ancillary services. Operational staff need to recognise that machines such as word-processors and micro-computers are now routine tools for their use and no more frightening than the telephone or typewriter.

2.27 Some districts have adopted a positive approach to preparing their staff for new technology. In Bolton Health District, for example, a computer club has been introduced with lectures, discussions and demonstrations. The objective should be to show staff that not only will they be able to cope with IT but they will also, like their children, enjoy exploiting the opportunities it presents.

2.28 The technical training of all staff using a new IT application is essential. This should include not only guidance on how to use the technology but also prescriptive training about the data to be collected. The NHS/DHSS Health Services Information Steering Group has a training advisory group which is collaborating with the Regional Computer Service Officers' Training Group to prepare training material and encourage its use.

Technical guidance

2.29 A district IT policy should contain guidance about:

a. standardisation of data content,
b. hardware selection,
c. systems support,
d. equipment maintenance,
e. standards and documentation, and
f. confidentiality and security.

2.30 In developing IT across the district the essential component which requires standardisation is the data to be processed. The NHS/DHSS Health Services Information Steering Group is prescribing standards of data content which will enhance compatibility between activity, manpower and financial information systems. Common data sets will greatly assist the transfer of data between systems and their merging to produce management information.

2.31 Although it is becoming easier to connect equipment supplied by different hardware manufacturers and to transfer data between them, there is merit in attempting to limit the range of equipment supplied to a district. District staff can become familiar and most proficient with a narrow range of machines, the potential of the equipment is better understood and if one item fails it may be possible to provide cover from similar equipment within the district. Few districts have managed to achieve this ideal and, as noted in paragraph 2.11, it will only be attained through the provision of high quality technical advice by the users' group and the district IT officer.

2.32 Substantial IT applications will require systems support. Good systems grow and a district will need to avail itself of any modifications or extensions. A major advantage of choosing well

established applications is that systems support is likely to be available. This should always be the case if the system has been developed and evaluated by a regional computer services department.

2.33 A major consideration in determining the revenue consequences of an IT system is the need for equipment maintenance. This is particularly important for systems which are essential to the running of services. Maintenance costs per year are frequently higher than 10 per cent of the total purchasing cost. A limited range of hardware in the district will greatly help solve the problems of maintenance as cheaper contracts can be negotiated and the service should become more efficient as maintenance engineers become familiar with the idiosyncracies of the district.

2.34 The adequate documentation of IT systems is also a factor to be considered in a district policy. Locally developed systems should be fully documented to an agreed regional standard so that they can be transferred elsewhere. Regional and commercially produced systems which a district decides to implement should also come with detailed documentation which will allow the system to be tailored to local needs if required.

2.35 Many IT applications will include the storage of named patient and staff data. Strict precautions must be taken to ensure the confidentiality of these data. A code of practice for health authorities is being prepared by the NHS/DHSS Health Services Information Steering Group and this will be issued next year.

Chapter 3 : Computerised departmental information systems

The applications

3.1 Computer applications in a district can be divided broadly into systems concerned with:

a. clinical services,
b. general services,
c. personnel, and
d. finance.

3.2 Personnel and finance systems usually cover many departments and are organised on a district or unit basis. To obtain management information there is a need for these systems to be closely related, and a number of IT applications have been or are being developed which assist the required systems integration. These matters will be discussed in a future publication in this series.

3.3 The major clinical services provided by a district health authority can be categorised as:

a. services provided in hospital –

hospital wards,
operating theatres,
accident and emergency departments,
radiotherapy departments,
diagnostic services,
pharmacy services,

b. services provided in or outside hospital –

consultant outpatient clinics,
day care facilities,
paramedical services,
family planning services,
maternity services,

c. services provided outside the hospital –

community nursing,
preventive services, including those for child health, and
school health services.

The medical records function will be involved in the collection of much of the data required.

3.4 The major general services provided primarily within or for hospitals are:

a. works and estate management,
b. supplies,
c. catering,
d. laundry,
e. CSSD,
f. domestic services, and
g. portering.

Some of these services may also be concerned with care in the community.

General approach

3.5 It is *proposed* that any computerised information system for either clinical or general hospital services should have the objective of improving the efficiency of resource use, while maintaining the

same standard of service and, where possible, achieving recurring savings. It should have the capability of:

a. providing robust operational systems which can take over routine repetitive tasks currently done manually, and
b. producing high quality management information, permitting the non-technical user access to standard reports as well as the opportunity to make *ad hoc* enquiries.

3.6 Not all computerised information systems are cost-effective purely in terms of their capability to perform operational procedures. Major benefits accrue to the organisation only when operational managers have adequate information to control the services for which they are responsible and district managers make informed decisions about resource allocation and the future pattern of services required.

3.7 The technical and organisational aspects of an IT strategy, discussed in Chapter 2, are all pertinent to the consideration of computerised information systems for clinical and general hospital services. Two particular points are of importance in the context of departmental systems, namely:

a. the modularisation of the system, and
b. the requirements for linking between systems.

3.8 It is *proposed* that as a general rule any computerised departmental information system be made up of discrete modules, each of which is designed to tackle a specific operational task. A modular system can be expanded or modified and enhanced at comparatively low cost. It also allows a department the combination of modules which meet the specific user needs.

3.9 The modular system for an accident and emergency department being developed in Leeds West Health District will allow, for

example, a specific department to choose from the following modules:

a. patient registration,
b. production of A & E cards, labels, GP letters, bills for road traffic accidents and registers,
c. clinical details input with options for different types of accident and acute illness,
d. listings of specified groups, for example, the under fives,
e. patient enquiries, and
f. standard and *ad hoc* reports, including a local research facility and information for accident prevention programmes and health education.

3.10 The requirement to link data from different systems will depend primarily on the management requirement for information, although for the clinical services, linkage may be essential to the efficiency of the operational procedures. Linkage needs to be considered to provide:

a. the electronic transfer of data files from one system to another,
b. the ability to transmit messages,
c. the ability to relate data held in one system with that in another, and
d. the merging of data from more than one system, permitting information to be obtained from the large data base thus formed.

3.11 The electronic transfer of data files from one system to another is becoming technically easier even if the systems are run on different manufacturers' machines. The district financial system requires activity data from all the general and clinical services, and where a computerised departmental information system is operational, these should be transmitted electronically. It is thus *proposed* that the user requirement for any departmental system includes the capability of electronically transferring the requisite

information to the finance department.

3.12 The ability to transmit messages between systems is particularly relevant to the clinical services. Applications currently operational include the electronic ordering of pathology and radiology investigations from the ward and the availability of the results. The need for such a facility will vary depending on the type and quantity of clinical work being carried out. There have been major advances in IT communications capability in the last few years and the relevance of these to intra-district communications will be considered in a future publication.

3.13 All systems for clinical services require data about basic patient characteristics such as name, number, age and address. If these data are collected and kept separately for each application it wastes staff time and can cause confusion because of inaccuracies. Such data should be captured accurately and up-dated as required in a patient register or index. It is *proposed* that the user requirement for any clinical service information system include the capability of accessing the patient register, and the requirement for key identification data in the system, such as a patient number, which will permit data to be related to the register.

3.14 It is technically possible to arrange for all users of clinical systems to input data to the patient register as well as obtain information from it. However, the feasibility of the technology is not a justification for its implementation; of paramount importance is the need for organisational arrangements which ensure the quality of the data entered. It is because of the latter considerations that most districts with a patient register have limited the right to enter data on it to trained medical records staff.

3.15 The merging of data collected in different systems to form an interactive data base permitting users access to a wide range of

information is an exciting possibility. It will be some years, however, before such a facility will be available routinely throughout the NHS. The NHS Computer Policy Committee has initiated important studies to examine the feasibility of such developments. In the interim, much useful information can be obtained by merging sub-sets of the totality of data collected in the large operational systems and exploiting the management information data bases thus obtained.

3.16 The complexity of technical guidance required in a district IT policy depends on the operational and information requirements of the users. There is less need for technical prescription if all that is required is the transfer of data files. The development of a comprehensive district interactive data base will require detailed technical guidance. At the present stage of technological development, a considerable degree of software and hardware compatibility is essential.

3.17 For some applications, data systems at district need to be linked with regional systems. This is particularly pertinent to manpower and financial systems but may also be relevant for some of the clinical or general hospital services systems. As with the district applications, the linking needs must be determined by the user requirements of both district and regional managers. There is also increasing interest in the great potential of linking community services information systems to computerised patient registers held by family practitioner committees.

Hardware consequences

3.18 The availability of a number of departmental information systems to a district has important consequences for the purchase of computer hardware. Although they are not mutually exclusive, there are currently two main strategies open to district authorities, namely:

a. the purchase of a general purpose small mainframe or large mini-computer associated with stand-alone work stations, or
b. the setting up of a network of linked computers of varying sizes.

3.19 Most development in the NHS to date has been on the basis of introducing a general purpose machine. However, recent technological advances suggest that the establishment of a local area network will become a viable proposition particularly if there is hardware compatibility. Advantages claimed for this latter approach are that the entry cost is low, modular expansion costs are low and the system is not dependent on a central processer. In a network, machines can be flexibly used and another machine can rapidly take over processing functions if there is a failure elsewhere in the system. The computer network in Huntingdon Health District is described in a previous publication in this series, *Introducing IT in the district office.*

Chapter 4 : Implications outside the district

4.1 Although the greater part of the IT in the NHS will be implemented in the district, few districts have the capacity to achieve their objectives without outside assistance. Regional computer departments and the commercial IT sector both have important parts to play, and the NHS Computer Policy Committee has a vital role in coordinating a national strategy and creating the conditions conducive to the widespread and cost effective implementation of IT applications.

4.2 The district IT policy described in Chapter 2 is dependent on outside bodies for:

a. the impartial evaluation of NHS and other IT applications,
b. advice on hardware and software choices when outside the competence of district staff,
c. assistance with the development of locally specified systems,
d. technical support of the systems implemented,
e. maintenance of the systems implemented,
f. a bureau service for some computing applications,
g. the training of IT staff and the provision of training materials for IT operators,
h. standards of software documentation, and
i. standards of confidentiality for patient and staff data.

The district will also need to input data and access information directly from regional and other data bases.

4.3 To enable the successful implementation of the systems discussed in Chapter 3, a district should be able to choose from a range of preferred applications which have been designed so that they meet

the major requirements of district users. It is *proposed* that these applications should have the following characteristics:

a. be modular (see paragraphs 3.8 and 3.9),
b. have a low entry cost and low incremental cost for each module,
c. be linkable both within and between management units to the levels required by the user (see paragraphs 3.10 to 3.16),
d. have flexibility of software and hardware so that different software applications can be run on the same hardware and the same software can be run on a range of hardware configurations,
e. be linkable to extra-district systems as required (see paragraph 3.17),
f. have systems back-up in that there is hardware redundancy in the system,
g. have full systems support and maintenance including hardware maintenance, software trouble shooting and systems extension and enhancement,
h. require the minimum of day-to-day technical support, and
i. be easily and quickly modifiable at the lowest possible cost.

4.4 Over the next five years there is a major opportunity to equip managers with effective tools which will enable them to influence decisively the management of NHS resources. The prime need for timely, relevant information is within the district and the major impetus for the introduction of IT applications must come from departmental, unit and district managers. Regional health authorities have an essential and rewarding part to play in advising and supporting districts and in ensuring that they or the commercial sector produce the applications needed by district users. To the NHS Computer Policy Committee falls the difficult task of creating an environment in which staff from district, region and the commercial sector collaborate to produce the technological evolution in information and administration systems which is required urgently to help the performance of NHS managers.

Appendix

INFORMATION STEERING GROUP/COMPUTER POLICY COMMITTEE WORKSHOP HELD AT BRISTOL 1–2 JUNE 1983

Attenders

Mr P Bishop	Secretary to the NHS Computer Policy Committee
Mr J Coles	Assistant Director of the CASPE Project
Mr K Cottrell	Director, Performance Review Team, Mersey RHA
Mr A Davison	District Administrator, North East Essex DHA
Mr M Fitchett	District Administrator, East Hertfordshire DHA
Mr M Garner	District Finance Officer, Huntingdon DHA
Mrs E Körner	Chairman of Information Steering Group
Dr A Mason	Secretariat of Information Steering Group
Mr H Nattrass	District Administrator, Winchester DHA
Mr V Peel	District Administrator, Bolton DHA
Mrs J Roberts	District Computer Services Officer, Lancaster DHA
Mr J Rushfirth	District Finance Officer, Leeds West DHA
Mr J Sparrow	Regional Management Services, South Western RHA
Dr J Todd	District Medical Officer, Sheffield DHA
Mr N Vincent	Regional Computer Services Officer, South West Thames RHA
Mrs L Wainwright	Secretariat of Information Steering Group
Mr C West	District Administrator, Portsmouth DHA

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